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| EXAMINER | |
|---|---|
| MCAVOY, ELLEN M | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/797,387 | MORITA, EITARO | |
| | Examiner | Art Unit | |
| | Ellen M. McAvoy | 1797 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *12 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-4,16,18,20 and 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,16,18,20 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 16, 18, 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazato et al (6,569,818) in combination with either Takagi (6,136,759) or Ripple (3,904,537).

Applicant's arguments filed 12 September 2007 have been fully considered but they are not persuasive. As previously set forth, Nakazato et al ["Nakazato"] disclose a lubricating oil composition having a low phosphorus content of 0.01 to 0.1 weight %, a sulfur content of 0.01 to 0.3 weight % and a sulfated ash (metal content) of 0.1 to 1 weight %, which is comprised of (a) a major amount of mineral base oil having a low sulfur (S) content of at most 0.1 weight %, preferably at most 0.005 weight %, (b) an ashless alkenyl or alkyl-succinimide dispersant or derivative thereof including borated succinimides (column 4, lines 46-55) in an amount of 0.01 to 0.3 weight % in terms of nitrogen atom content, (c) a metal-containing detergent such as an alkali metal or an alkaline earth metal salt of an alkylsalicylic acid in an amount of about 0.2 to 7 weight %, and may include other metal detergents such as sulfonate detergents, (d) a zinc dialkyl-dithiophosphate in an amount of 0.01 to 0.1 weight % in terms of a phosphorus content, and (e) an oxidation inhibitor selected from the group consisting of a phenol compound and an amine compound in an amount of 0.01 to 5 weight %. See column 2, line 25 to column 3, line 7.

Nakazato teaches that the lubricating oil composition may be used in internal combustion engines. See column 1, lines 5-11. Applicants' open-ended claim language "comprising" allows for the addition of other additives to the oil compositions such as the zinc dialkyldithiophosphate component of the prior art. Nakazato teaches that the lubricating oil compositions may contain other auxiliary additives such as metal-inactivating agents (e.g., benzotriazole compounds and thiadiazole compounds). Nakazato teaches that the additives can be incorporated into the lubricating oil compositions in an amount ranging from about 0.001 to 3 weight %. See column 7, line 67 to column 8, line 11.

Applicant responded to the previous rejection by amending independent claim 1 to include thiadiazole compounds selected from the group consisting of 1,2,4-thiadiazole compounds and 1,4,5-thiadiazole compounds represented by formulas (8) and (9). However, such compounds are known in the art as evidenced by either Takagi et al ["Takagi"] or Ripple. Takagi discloses an additive composition containing an extreme pressure improver that includes thiadiazole compounds such as 1,3,4-thiadiazole and 1,2,4-thiadiazoles of general formula (IV) set forth in column 4. Ripple discloses 1,2,4-thiadiazole compounds as additives to lubricating oil compositions. Having the prior art references before the inventors at the time the invention was made it would have been obvious to the skilled artisan to have added any conventional thiadiazole compound to the lubricant compositions of Nakazato such as those disclosed in Takagi and Ripple. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re*

*Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in Nakazato that the lubricating oil compositions may contain other auxiliary additives such as benzotriazole compounds and thiadiazole compounds.

***Claim Rejections - 35 USC § 103***

Claims 1-4, 16, 18, 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (6,617,286) in combination with either Takagi (6,136,759) or Ripple (3,904,537).

Applicant's arguments filed 12 September 2007 have been fully considered but they are not persuasive. As previously set forth, Sato et al ["Sato"] disclose a lubricating oil composition for continuously variable transmissions which comprises a lubricating base oil made of mineral oil and/or a synthetic oil formulated with a phosphorus-based wear preventive additive (A), a metal detergent additive (B) and an ashless dispersant additive (C). The phosphorus-containing wear preventive used as component (A) includes phosphate esters and phosphite esters. See column 4, lines 48-63. The metal detergent additive (B) includes overbased calcium salicylates and sulfonates having a TBN ranging from 10-450 mg KOH/g. Sato teaches that the amount of metal detergent is preferably in the range of 100-1000 ppm as a metal content based on the total weight of the composition. The ashless dispersant additive (C) includes boron-containing succinimides which may be added to the composition in an amount of 0.1 to 10 weight %. See column 5. Sato allows for the addition of other additive to the composition including non-borated imide ashless dispersants and metal deactivator compounds including benzotriazole, thiadiazoles and derivatives thereof. See column 6, lines 39-44. Thus, the examiner is of the

position that the compositions of Sato clearly meet the limitations of the above rejected claims. Although a sulfur content is not specifically set forth, Sato allows for the addition of sulfur-containing compounds including the metal deactivator compounds.

Applicant responded to the previous rejection by amending independent claim 1 to include thiadiazole compounds selected from the group consisting of 1,2,4-thiadiazole compounds and 1,4,5-thiadiazole compounds represented by formulas (8) and (9). However, such compounds are known in the art as evidenced by either Takagi et al ["Takagi"] or Ripple. Takagi discloses an additive composition containing an extreme pressure improver that includes thiadiazole compounds such as 1,3,4-thiadiazole and 1,2,4-thiadiazoles of general formula (IV) set forth in column 4. Ripple discloses 1,2,4-thiadiazole compounds as additives to lubricating oil compositions. Having the prior art references before the inventors at the time the invention was made it would have been obvious to the skilled artisan to have added any conventional thiadiazole compound to the lubricant compositions of Sato such as those disclosed in Takagi and Ripple. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in Sato that allows for the addition of other additive to the composition including metal deactivator compounds such as benzotriazole, thiadiazoles and derivatives thereof.

***Claim Rejections - 35 USC § 103***

Claims 1-4, 16, 18, 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogano et al (6,638,897) in combination with either Takagi (6,136,759) or Ripple (3,904,537).

Applicant's arguments filed 12 September 2007 have been fully considered but they are not persuasive. As previously set forth, Ogano et al ["Ogano"] disclose a lubricating oil composition for internal combustion engines comprising a base oil composed of a mineral oil, synthetic oil, or mixtures thereof, incorporated with (A) an overbased calcium salicylate having a TBN in the range of 30-100 mgKOH/g in an amount of 0.05 to 0.90 weight % as calcium, and (B) a succinimide selected from the group consisting of (1) a boron-containing succinimide having a weight-average molecular weight of 3,000 or less at 0.04 weight % or less as boron, and (2) a non-borated succinimide having a weight average molecular weight of 3,000 or less at 0.01 to 0.25 weight % as nitrogen, and (3) mixtures thereof. See column 3, lines 7-53. Ogano teaches that the base oil may be used either individually or in combination and the oil(s) have a kinematic viscosity in the range of 2 to 20 $mm^2/s$ at 100°C. Ogano allows for the addition of other additives to the compositions that include sulfided esters friction reducing agents in an amount of 0.05 to 3 weight %, dithiocarbamate antiwear agents in an amount of 0.1 to 5 weight %, and metal deactivators including benzotriazole, and thiadiazole derivatives in an amount of about 0.001 to 3 weight %. See column 7, lines 21-46. Thus the examiner is of the position that all of the components of applicant's claims are taught by Ogano. Although a sulfur content is

not set forth, the sulfur-containing compounds may be added in amounts which place the sulfur content of the oil compositions in the claimed ranges.

Applicant responded to the previous rejection by amending independent claim 1 to include thiadiazole compounds selected from the group consisting of 1,2,4-thiadiazole compounds and 1,4,5-thiadiazole compounds represented by formulas (8) and (9). However, such compounds are known in the art as evidenced by either Takagi et al ["Takagi"] or Ripple. Takagi discloses an additive composition containing an extreme pressure improver that includes thiadiazole compounds such as 1,3,4-thiadiazole and 1,2,4-thiadiazoles of general formula (IV) set forth in column 4. Ripple discloses 1,2,4-thiadiazole compounds as additives to lubricating oil compositions. Having the prior art references before the inventors at the time the invention was made it would have been obvious to the skilled artisan to have added any conventional thiadiazole compound to the lubricant compositions of Ogano such as those disclosed in Takagi and Ripple. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in Ogano allowing for the addition of other additives to the compositions including metal deactivators such as benzotriazole, and thiadiazole derivatives in an amount of about 0.001 to 3 weight %.

The rejection of claims 6-19 under 35 U.S.C. 102(a) or (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Andoh et al [European Patent Application (1,104,800)] made in the previous office action is withdrawn in view of the cancellation of these claims in the amendment filed 12 September 2007.

The rejection of claims 6-19 under 35 U.S.C. 102(a) or (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakamura et al [Japanese Patent (2000-034491)] made in the previous office action is withdrawn in view of the cancellation of these claims in the amendment filed 12 September 2007.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Everett et al (5,164,102) discloses engine lubricating oil compositions comprising a sulfurized carboxylic acid ester. See column 4, lines 14-61.

Floyd (5,703,022) discloses sulfurized vegetable oils containing antioxidants as a lubricant base fluid which has a sulfur content from 0.3 to 4 % by weight. See column 6, lines 18-20.

Lacome et al (6,054,418) discloses a process for sulfurizing a composition of unsaturated fatty esters which may be used as additives in lubricating oils.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M. McAvoy whose telephone number is (571) 272-1451. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ellen M McAvoy
Primary Examiner
Art Unit 1797

EMcAvoy
January 4, 2008